



## SEQUENCE LISTING

- <110> Grogan, Case C.  
Hevey, Michael C.  
Schmaljohn, Alan, L.
- <120> Chimeric Filovirus Glycoprotein
- <130> 003/243/SAP
- <140> 10/066,506
- <141> 2002-01-31
- <150> 60/267,522
- <151> 2001-01-31
- <160> 30
- <170> Apple Macintosh Microsoft Word 6.0
- <210> 1
- <211> 2252
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> chimeric molecule between Ebola virus Zaire Mayinga strain Glycoprotein 1 and Marburg virus strain Musoke Glycoprotein 2
- <400> 1

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<210> 2

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<212> PRT

<213> Artificial Sequence

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<223> chimeric molecule between Ebola virus Zaire Mayinga strain Glycoprotein 1 and Marburg virus strain Musoke Glycoprotein 2

<400> 2

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Ser Thr Leu Gln Val Ser Asp Val Asp Lys
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Leu Val Cys Arg Asp Lys Leu Ser Ser Thr
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Asn Gln Leu Arg Ser Val Gly Leu Asn Leu
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&lt;211&gt; 1841

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> chimeric molecule between Marburg virus strain Musoke  
 Glycoprotein 1 and Ebola virus Zaire Mayinga strain  
 Glycoprotein 2

&lt;400&gt; 3

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<210> 4

<211> 610

<212> PRT

<213> Artificial Sequence

<220>

<223> chimeric molecule between Marburg virus strain Musoke  
Glycoprotein 1 and Ebola virus Zaire Mayinga strain  
Glycoprotein 2

<400> 4

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&lt;210&gt; 5

&lt;211&gt; 2046

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; chimeric molecule between Marburg virus strain Musoke Glycoprotein 1 and Marburg virus strain Raven Glycoprotein 2

&lt;400&gt; 5

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<210> 6

<211> 681

<212> PRT

<213> Artificial Sequence

<220>

<223> chimeric molecule between Marburg virus strain Musoke  
Glycoprotein 1 and Marburg virus strain Raven Glycoprotein 2

<400> 6

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Met Lys Thr Thr Cys Phe Leu Ile Ser Leu
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Ile Leu Ile Gln Gly Thr Lys Asn Leu Pro
             15             20
Ile Leu Glu Ile Ala Ser Asn Asn Gln Pro

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				25					30
Gln	Asn	Val	Asp	Ser	Val	Cys	Ser	Gly	Thr
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Leu	Gln	Lys	Thr	Glu	Asp	Val	His	Leu	Met
				45					50
Gly	Phe	Thr	Leu	Ser	Gly	Gln	Lys	Val	Ala
				55					60
Asp	Ser	Pro	Leu	Glu	Ala	Ser	Lys	Arg	Trp
				65					70
Ala	Phe	Arg	Thr	Gly	Val	Pro	Pro	Lys	Asn
				75					80
Val	Glu	Tyr	Thr	Glu	Gly	Glu	Glu	Ala	Lys
				85					90
Thr	Cys	Tyr	Asn	Ile	Ser	Val	Thr	Asp	Pro
				95					100
Ser	Gly	Lys	Ser	Leu	Leu	Leu	Asp	Pro	Pro
				105					110
Thr	Asn	Ile	Arg	Asp	Tyr	Pro	Lys	Cys	Lys
				115					120
Thr	Ile	His	His	Ile	Gln	Gly	Gln	Asn	Pro
				125					130
His	Ala	Gln	Gly	Ile	Ala	Leu	His	Leu	Trp
				135					140
Gly	Ala	Phe	Phe	Leu	Tyr	Asp	Arg	Ile	Ala
				145					150
Ser	Thr	Thr	Met	Tyr	Arg	Gly	Lys	Val	Phe
				155					160
Thr	Glu	Gly	Asn	Ile	Ala	Ala	Met	Ile	Val
				165					170
Asn	Lys	Thr	Val	His	Lys	Met	Ile	Phe	Ser
				175					180
Arg	Gln	Gly	Gln	Gly	Tyr	Arg	His	Met	Asn
				185					190
Leu	Thr	Ser	Thr	Asn	Lys	Tyr	Trp	Thr	Ser
				195					200
Ser	Asn	Gly	Thr	Gln	Thr	Asn	Asp	Thr	Gly
				205					210
Cys	Phe	Gly	Ala	Leu	Gln	Glu	Tyr	Asn	Ser
				215					220
Thr	Lys	Asn	Gln	Thr	Cys	Ala	Pro	Ser	Lys
				225					230
Ile	Pro	Pro	Pro	Leu	Pro	Thr	Ala	Arg	Pro
				235					240
Glu	Ile	Lys	Leu	Thr	Ser	Thr	Pro	Thr	Asp
				245					250
Ala	Thr	Lys	Leu	Asn	Thr	Thr	Asp	Pro	Ser
				255					260
Ser	Asp	Asp	Glu	Asp	Leu	Ala	Thr	Ser	Gly
				265					270
Ser	Gly	Ser	Gly	Glu	Arg	Glu	Pro	His	Thr
				275					280
Thr	Ser	Asp	Ala	Val	Thr	Lys	Gln	Gly	Leu
				285					290
Ser	Ser	Thr	Met	Pro	Pro	Thr	Pro	Ser	Pro

				295					300
Gln	Pro	Ser	Thr	Pro	Gln	Gln	Gly	Gly	Asn
				305					310
Asn	Thr	Asn	His	Ser	Gln	Asp	Ala	Val	Thr
				315					320
Glu	Leu	Asp	Lys	Asn	Asn	Thr	Thr	Ala	Gln
				325					330
Pro	Ser	Met	Pro	Pro	His	Asn	Thr	Thr	Thr
				335					340
Ile	Ser	Thr	Asn	Asn	Thr	Ser	Lys	His	Asn
				345					350
Phe	Ser	Thr	Leu	Ser	Ala	Pro	Leu	Gln	Asn
				355					360
Thr	Thr	Asn	Asp	Asn	Thr	Gln	Ser	Thr	Ile
				365					370
Thr	Glu	Asn	Glu	Gln	Thr	Ser	Ala	Pro	Ser
				375					380
Ile	Thr	Thr	Leu	Pro	Pro	Thr	Gly	Asn	Pro
				385					390
Thr	Thr	Ala	Lys	Ser	Thr	Ser	Ser	Lys	Lys
				395					400
Gly	Pro	Ala	Thr	Thr	Ala	Pro	Asn	Thr	Thr
				405					410
Asn	Glu	His	Phe	Thr	Ser	Pro	Pro	Pro	Thr
				415					420
Pro	Ser	Ser	Thr	Ala	Gln	His	Leu	Val	Tyr
				425					430
Phe	Arg	Arg	Lys	Arg	Ser	Ile	Phe	Trp	Lys
				435					440
Glu	Gly	Asp	Ile	Phe	Pro	Phe	Leu	Asp	Gly
				445					450
Leu	Ile	Asn	Thr	Glu	Ile	Asp	Phe	Asp	Pro
				455					460
Ile	Pro	Asn	Thr	Glu	Thr	Ile	Phe	Asp	Glu
				465					470
Ser	Pro	Ser	Phe	Asn	Thr	Ser	Thr	Asn	Glu
				475					480
Glu	Gln	His	Thr	Pro	Pro	Asn	Ile	Ser	Leu
				485					490
Thr	Phe	Ser	Tyr	Phe	Pro	Asp	Lys	Asn	Gly
				495					500
Asp	Thr	Ala	Tyr	Ser	Gly	Glu	Asn	Glu	Asn
				505					510
Asp	Cys	Asp	Ala	Glu	Leu	Arg	Ile	Trp	Ser
				515					520
Val	Gln	Glu	Asp	Asp	Leu	Ala	Ala	Gly	Leu
				525					530
Ser	Trp	Ile	Pro	Phe	Phe	Gly	Pro	Gly	Ile
				535					540
Glu	Gly	Leu	Tyr	Thr	Ala	Gly	Leu	Ile	Lys
				545					550
Asn	Gln	Asn	Asn	Leu	Val	Cys	Arg	Leu	Arg
				555					560
Arg	Leu	Ala	Asn	Gln	Thr	Ala	Lys	Ser	Leu

	565		570
Glu Leu Leu Leu Arg Val Thr Thr Glu Glu			
	575		580
Arg Thr Phe Ser Leu Ile Asn Arg His Ala			
	585		590
Ile Asp Phe Leu Leu Thr Arg Trp Gly Gly			
	595		600
Thr Cys Lys Val Leu Gly Pro Asp Cys Cys			
	605		610
Ile Gly Ile Glu Asp Leu Ser Lys Asn Ile			
	615		620
Ser Glu Gln Ile Asp Lys Ile Arg Lys Asp			
	625		630
Glu Gln Lys Glu Glu Thr Gly Trp Gly Leu			
	635		640
Gly Gly Lys Trp Trp Thr Ser Asp Trp Gly			
	645		650
Val Leu Thr Asn Leu Gly Ile Leu Leu Leu			
	655		660
Leu Ser Ile Ala Val Leu Ile Ala Leu Ser			
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Cys Ile Cys Arg Ile Phe Thr Lys Tyr Ile			
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Gly			

&lt;210&gt; 7

&lt;211&gt; 2046

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> chimeric molecule between Marburg virus strain Raven  
Glycoprotein 1 and Marburg virus strain Musoke Glycoprotein 2

&lt;400&gt; 7

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taaacgatgg gctttcagga caggtgttcc tcccaagaac gttgagtata	250
cggaaggaga agaagccaaa acatgttaca atataagtgt aacagaccct	300
tctggaaaat ccttgctgct ggatccctcc agtaatatcc gcgattaccc	350
taaatgtaaa actgttcac atattcaagg tcaaaaccct catgcacagg	400
ggattgccct ccatttgtgg ggggcatttt tcttgatga tcgcgttgcc	450
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aaggttatcg tcacatgaac ttgacctcca ccaataaata ttggacaagc	600
agcaatgaaa cgcagagaaa tgatacggga tgttttggca tcctccaaga	650
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actgctaaat ctggaactat gaaccaagt agcgacgatg aggaccttat	800
gatttccggc tcaggatctg gagaacaggg gccccacaca actcttaatg	850
tagtactga acagaaacaa tcgtcaacaa tattgtccac tccttacta	900
catccaagca cctcacaaca tgagcaaaac agtacgaatc cttcccgaca	950
tgctgtaact gagcacaatg gaaccgaccc aacaacacaa ccagcaacgc	1000

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tcctcaacaa tactaataca actccacact ataacactct caagtacaac 1050
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<210> 8

<211> 681

<212> PRT

<213> Artificial Sequence

<220>

<223> chimeric molecule between Marburg virus strain Raven  
Glycoprotein 1 and Marburg virus strain Musoke Glycoprotein 2

<400> 8

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Met Lys Thr Ile Tyr Phe Leu Ile Ser Leu
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Ile Leu Ile Gln Ser Ile Lys Thr Leu Pro
                15                20
Val Leu Glu Ile Ala Ser Asn Ser Gln Pro
                25                30
Gln Asp Val Asp Ser Val Cys Ser Gly Thr
                35                40
Leu Gln Lys Thr Glu Asp Val His Leu Met
                45                50
Gly Phe Thr Leu Ser Gly Gln Lys Val Ala
                55                60
Asp Ser Pro Leu Glu Ala Ser Lys Arg Trp
                65                70
Ala Phe Arg Thr Gly Val Pro Pro Lys Asn
                75                80
Val Glu Tyr Thr Glu Gly Glu Glu Ala Lys
                85                90
Thr Cys Tyr Asn Ile Ser Val Thr Asp Pro
                95               100
Ser Gly Lys Ser Leu Leu Leu Asp Pro Pro
                105               110

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Ser	Asn	Ile	Arg	Asp	Tyr	Pro	Lys	Cys	Lys	
				115					120	
Thr	Val	His	His	Ile	Gln	Gly	Gln	Asn	Pro	
				125					130	
His	Ala	Gln	Gly	Ile	Ala	Leu	His	Leu	Trp	
				135					140	
Gly	Ala	Phe	Phe	Leu	Tyr	Asp	Arg	Val	Ala	
				145					150	
Ser	Thr	Thr	Met	Tyr	Arg	Gly	Lys	Val	Phe	
				155					160	
Thr	Glu	Gly	Asn	Ile	Ala	Ala	Met	Ile	Val	
				165					170	
Asn	Lys	Thr	Val	His	Arg	Met	Ile	Phe	Ser	
				175					180	
Arg	Gln	Gly	Gln	Gly	Tyr	Arg	His	Met	Asn	
				185					190	
Leu	Thr	Ser	Thr	Asn	Lys	Tyr	Trp	Thr	Ser	
				195					200	
Ser	Asn	Glu	Thr	Gln	Arg	Asn	Asp	Thr	Gly	
				205					210	
Cys	Phe	Gly	Ile	Leu	Gln	Glu	Tyr	Asn	Ser	
				215					220	
Thr	Asn	Asn	Gln	Thr	Cys	Pro	Pro	Ser	Leu	
				225					230	
Lys	Pro	Pro	Ser	Leu	Pro	Thr	Val	Thr	Pro	
				235					240	
Ser	Ile	His	Ser	Thr	Asn	Thr	Gln	Ile	Asn	
				245					250	
Thr	Ala	Lys	Ser	Gly	Thr	Met	Asn	Pro	Ser	
				255					260	
Ser	Asp	Asp	Glu	Asp	Leu	Met	Ile	Ser	Gly	
				265					270	
Ser	Gly	Ser	Gly	Glu	Gln	Gly	Pro	His	Thr	
				275					280	
Thr	Leu	Asn	Val	Val	Thr	Glu	Gln	Lys	Gln	
				285					290	
Ser	Ser	Thr	Ile	Leu	Ser	Thr	Pro	Ser	Leu	
				295					300	
His	Pro	Ser	Thr	Ser	Gln	His	Glu	Gln	Asn	
				305					310	
Ser	Thr	Asn	Pro	Ser	Arg	His	Ala	Val	Thr	
				315					320	
Glu	His	Asn	Gly	Thr	Asp	Pro	Thr	Thr	Gln	
				325					330	
Pro	Ala	Thr	Leu	Leu	Asn	Asn	Thr	Asn	Thr	
				335					340	
Thr	Pro	Thr	Tyr	Asn	Thr	Leu	Lys	Tyr	Asn	
				345					350	
Leu	Ser	Thr	Pro	Ser	Pro	Pro	Thr	Arg	Asn	
				355					360	
Ile	Thr	Asn	Asn	Asp	Thr	Gln	Arg	Glu	Leu	
				365					370	
Ala	Glu	Ser	Glu	Gln	Thr	Asn	Ala	Gln	Leu	
				375					380	

Asn	Thr	Thr	Leu	Asp	Pro	Thr	Glu	Asn	Pro	385	390
Thr	Thr	Gly	Gln	Asp	Thr	Asn	Ser	Thr	Thr	395	400
Asn	Ile	Ile	Met	Thr	Thr	Ser	Asp	Ile	Thr	405	410
Ser	Lys	His	Pro	Thr	Asn	Ser	Ser	Pro	Asp	415	420
Ser	Ser	Pro	Thr	Thr	Arg	Pro	Pro	Ile	Tyr	425	430
Phe	Arg	Lys	Lys	Arg	Ser	Ile	Leu	Trp	Arg	435	440
Glu	Gly	Asp	Met	Phe	Pro	Phe	Leu	Asp	Gly	445	450
Leu	Ile	Asn	Ala	Pro	Ile	Asp	Phe	Asp	Pro	455	460
Val	Pro	Asn	Thr	Lys	Thr	Ile	Phe	Asp	Glu	465	470
Ser	Ser	Ser	Ser	Gly	Ala	Ser	Ala	Glu	Glu	475	480
Asp	Gln	His	Ala	Ser	Pro	Asn	Ile	Ser	Leu	485	490
Thr	Leu	Ser	Tyr	Phe	Pro	Asn	Ile	Asn	Glu	495	500
Asn	Thr	Ala	Tyr	Ser	Gly	Glu	Asn	Glu	Asn	505	510
Asp	Cys	Asp	Ala	Glu	Leu	Arg	Ile	Trp	Ser	515	520
Val	Gln	Glu	Asp	Asp	Leu	Ala	Ala	Gly	Leu	525	530
Ser	Trp	Ile	Pro	Phe	Phe	Gly	Pro	Gly	Ile	535	540
Glu	Gly	Leu	Tyr	Thr	Ala	Val	Leu	Ile	Lys	545	550
Asn	Gln	Asn	Asn	Leu	Val	Cys	Arg	Leu	Arg	555	560
Arg	Leu	Ala	Asn	Gln	Thr	Ala	Lys	Ser	Leu	565	570
Glu	Leu	Leu	Leu	Arg	Val	Thr	Thr	Glu	Glu	575	580
Arg	Thr	Phe	Ser	Leu	Ile	Asn	Arg	His	Ala	585	590
Ile	Asp	Phe	Leu	Leu	Thr	Arg	Trp	Gly	Gly	595	600
Thr	Cys	Lys	Val	Leu	Gly	Pro	Asp	Cys	Cys	605	610
Ile	Gly	Ile	Glu	Asp	Leu	Ser	Lys	Asn	Ile	615	620
Ser	Glu	Gln	Ile	Asp	Gln	Ile	Lys	Lys	Asp	625	630
Glu	Gln	Lys	Glu	Gly	Thr	Gly	Trp	Gly	Leu	635	640
Gly	Gly	Lys	Trp	Trp	Thr	Ser	Asp	Trp	Gly	645	650

Val Leu Thr Asn Leu Gly Ile Leu Leu Leu  
                                 655                                660  
 Leu Ser Ile Ala Val Leu Ile Ala Leu Ser  
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 Cys Ile Cys Arg Ile Phe Thr Lys Tyr Ile  
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<210> 9

<211> 2051

<212> DNA

<213> Marburg virus strain Musoke

<220>

<223> chimeric molecule between Marburg virus Glycoprotein 1  
 and Marburg virus Glycoprotein 2

<400> 9

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<210> 10

<211> 681

<212> PRT

<213> Marburg virus strain Musoke

<220>

<223> chimeric molecule between Marburg virus Glycoprotein 1  
and Marburg virus Glycoprotein 2

<400> 10

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Ile Leu Ile Gln Gly Thr Lys Asn Leu Pro
          15          20
Ile Leu Glu Ile Ala Ser Asn Asn Gln Pro
          25          30
Gln Asn Val Asp Ser Val Cys Ser Gly Thr
          35          40
Leu Gln Lys Thr Glu Asp Val His Leu Met
          45          50
Gly Phe Thr Leu Ser Gly Gln Lys Val Ala
          55          60
Asp Ser Pro Leu Glu Ala Ser Lys Arg Trp
          65          70
Ala Phe Arg Thr Gly Val Pro Pro Lys Asn
          75          80
Val Glu Tyr Thr Glu Gly Glu Glu Ala Lys
          85          90
Thr Cys Tyr Asn Ile Ser Val Thr Asp Pro
          95         100
Ser Gly Lys Ser Leu Leu Leu Asp Pro Pro
        105         110
Thr Asn Ile Arg Asp Tyr Pro Lys Cys Lys
        115         120
Thr Ile His His Ile Gln Gly Gln Asn Pro
        125         130
His Ala Gln Gly Ile Ala Leu His Leu Trp
        135         140
Gly Ala Phe Phe Leu Tyr Asp Arg Ile Ala
        145         150
Ser Thr Thr Met Tyr Arg Gly Lys Val Phe
        155         160
Thr Glu Gly Asn Ile Ala Ala Met Ile Val
        165         170
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        175         180
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        185         190
Leu Thr Ser Thr Asn Lys Tyr Trp Thr Ser

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	205		210
Cys Phe Gly Ala	Leu Gln Glu Tyr Asn	Ser	
	215		220
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	225		230
Ile Pro Pro Pro	Leu Pro Thr Ala Arg	Pro	
	235		240
Glu Ile Lys Leu	Thr Ser Thr Pro Thr	Asp	
	245		250
Ala Thr Lys Leu	Asn Thr Thr Asp Pro	Ser	
	255		260
Ser Asp Asp Glu	Asp Leu Ala Thr Ser	Gly	
	265		270
Ser Gly Ser Gly	Glu Arg Glu Pro His	Thr	
	275		280
Thr Ser Asp Ala	Val Thr Lys Gln Gly	Leu	
	285		290
Ser Ser Thr Met	Pro Pro Thr Pro Ser	Pro	
	295		300
Gln Pro Ser Thr	Pro Gln Gln Gly Gly	Asn	
	305		310
Asn Thr Asn His	Ser Gln Asp Ala Val	Thr	
	315		320
Glu Leu Asp Lys	Asn Asn Thr Thr Ala	Gln	
	325		330
Pro Ser Met Pro	Pro His Asn Thr Thr	Thr	
	335		340
Ile Ser Thr Asn	Asn Thr Ser Lys His	Asn	
	345		350
Phe Ser Thr Leu	Ser Ala Pro Leu Gln	Asn	
	355		360
Thr Thr Asn Asp	Asn Thr Gln Ser Thr	Ile	
	365		370
Thr Glu Asn Glu	Gln Thr Ser Ala Pro	Ser	
	375		380
Ile Thr Thr Leu	Pro Pro Thr Gly Asn	Pro	
	385		390
Thr Thr Ala Lys	Ser Thr Ser Ser Lys	Lys	
	395		400
Gly Pro Ala Thr	Thr Ala Pro Asn Thr	Thr	
	405		410
Asn Glu His Phe	Thr Ser Pro Pro Pro	Thr	
	415		420
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Phe Arg Arg Lys	Arg Ser Ile Leu Trp	Arg	
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Glu Gly Asp Met	Phe Pro Phe Leu Asp	Gly	
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Leu Ile Asn Ala	Pro Ile Asp Phe Asp	Pro	
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Val Pro Asn Thr	Lys Thr Ile Phe Asp	Glu	

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Thr	Leu	Ser	Tyr	Phe	Pro	Asn	Ile	Asn	Glu
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Asn	Thr	Ala	Tyr	Ser	Gly	Glu	Asn	Glu	Asn
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Asp	Cys	Asp	Ala	Glu	Leu	Arg	Ile	Trp	Ser
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Val	Gln	Glu	Asp	Asp	Leu	Ala	Ala	Gly	Leu
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Ser	Trp	Ile	Pro	Phe	Phe	Gly	Pro	Gly	Ile
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Glu	Gly	Leu	Tyr	Thr	Ala	Val	Leu	Ile	Lys
				545					550
Asn	Gln	Asn	Asn	Leu	Val	Cys	Arg	Leu	Arg
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Arg	Leu	Ala	Asn	Gln	Thr	Ala	Lys	Ser	Leu
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Glu	Leu	Leu	Leu	Arg	Val	Thr	Thr	Glu	Glu
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Arg	Thr	Phe	Ser	Leu	Ile	Asn	Arg	His	Ala
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Ile	Asp	Phe	Leu	Leu	Thr	Arg	Trp	Gly	Gly
				595					600
Thr	Cys	Lys	Val	Leu	Gly	Pro	Asp	Cys	Cys
				605					610
Ile	Gly	Ile	Glu	Asp	Leu	Ser	Lys	Asn	Ile
				615					620
Ser	Glu	Gln	Ile	Asp	Gln	Ile	Lys	Lys	Asp
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Glu	Gln	Lys	Glu	Gly	Thr	Gly	Trp	Gly	Leu
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Gly	Gly	Lys	Trp	Trp	Thr	Ser	Asp	Trp	Gly
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Val	Leu	Thr	Asn	Leu	Gly	Ile	Leu	Leu	Leu
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Leu	Ser	Ile	Ala	Val	Leu	Ile	Ala	Leu	Ser
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<210> 11

<211> 2039

<212> DNA

<213> Ebola virus Zaire strain

<220>

<223> chimeric molecule between Ebola virus Glycoprotein 1 and Ebola virus Glycoprotein 2

<400> 11

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<210> 12

<211> 676

<212> PRT

<213> Ebola virus Zaire strain

<220>

<223> chimeric molecule between Ebola virus Glycoprotein 1  
and Ebola virus Glycoprotein 2

<400> 12

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Leu	Val	Cys	Arg	Asp	Lys	Leu	Ser	Ser	Thr
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Asn	Gln	Leu	Arg	Ser	Val	Gly	Leu	Asn	Leu
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Glu	Gly	Asn	Gly	Val	Ala	Thr	Asp	Val	Pro
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Ser	Ala	Thr	Lys	Arg	Trp	Gly	Phe	Arg	Ser
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Gly	Val	Pro	Pro	Lys	Val	Val	Asn	Tyr	Glu
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Cys	Leu	Pro	Ala	Ala	Pro	Asp	Gly	Ile	Arg
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Gly	Phe	Pro	Arg	Cys	Arg	Tyr	Val	His	Lys
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Val	Ser	Gly	Thr	Gly	Pro	Cys	Ala	Gly	Asp
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Phe	Ala	Phe	His	Lys	Glu	Gly	Ala	Phe	Phe
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Leu	Tyr	Asp	Arg	Leu	Ala	Ser	Thr	Val	Ile
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Tyr	Arg	Gly	Thr	Thr	Phe	Ala	Glu	Gly	Val
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Val	Ala	Phe	Leu	Ile	Leu	Pro	Gln	Ala	Lys
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Lys	Asp	Phe	Phe	Ser	Ser	His	Pro	Leu	Arg
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Glu	Pro	Val	Asn	Ala	Thr	Glu	Asp	Pro	Ser
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Ser	Gly	Tyr	Tyr	Ser	Thr	Thr	Ile	Arg	Tyr
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Gln	Ala	Thr	Gly	Phe	Gly	Thr	Asn	Glu	Thr
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Glu	Tyr	Leu	Phe	Glu	Val	Asp	Asn	Leu	Thr
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Tyr	Val	Gln	Leu	Glu	Ser	Arg	Phe	Thr	Pro
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Gln	Phe	Leu	Leu	Gln	Leu	Asn	Glu	Thr	Ile
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Ile	Asp	Thr	Thr	Ile	Gly	Glu	Trp	Ala	Phe

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Trp	Glu	Thr	Lys	Lys	Asn	Leu	Thr	Arg	Lys	
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Ile	Ser	Thr	Ser	Pro	Gln	Ser	Leu	Thr	Thr	
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Thr Phe Ser Ile Leu Asn Arg Lys Ala Ile			
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Asp Phe Leu Leu Gln Arg Trp Gly Gly Thr			
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Cys His Ile Leu Gly Pro Asp Cys Cys Ile			
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Asp Lys Ile Asp Gln Ile Ile His Asp Phe			
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Val Asp Lys Thr Leu Pro Asp Gln Gly Asp			
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Trp Ile Pro Ala Gly Ile Gly Val Thr Gly			
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Val Ile Ile Ala Val Ile Ala Leu Phe Cys			
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&lt;210&gt; 13

&lt;211&gt; 2046

&lt;212&gt; DNA

&lt;213&gt; Marburg virus strain Raven

&lt;220&gt;

&lt;223&gt; chimeric molecule between Marburg virus Glycoprotein 1 and Marburg virus Glycoprotein 2

&lt;400&gt; 13

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<210> 14

<211> 681

<212> PRT

<213> Marburg virus strain Raven

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and Marburg virus Glycoprotein 2

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35 40
Leu Gln Lys Thr Glu Asp Val His Leu Met
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Gly Phe Thr Leu Ser Gly Gln Lys Val Ala
55 60
Asp Ser Pro Leu Glu Ala Ser Lys Arg Trp
65 70
Ala Phe Arg Thr Gly Val Pro Pro Lys Asn
75 80
Val Glu Tyr Thr Glu Gly Glu Glu Ala Lys
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Thr Cys Tyr Asn Ile Ser Val Thr Asp Pro
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Arg	Gln	Gly	Gln	Gly	Tyr	Arg	His	Met	Asn	
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Leu	Thr	Ser	Thr	Asn	Lys	Tyr	Trp	Thr	Ser	
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Pro	Ala	Thr	Leu	Leu	Asn	Asn	Thr	Asn	Thr	
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Ala	Glu	Ser	Glu	Gln	Thr	Asn	Ala	Gln	Leu	
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Val	Gln	Glu	Asp	Asp	Leu	Ala	Ala	Gly	Leu	525	530
Ser	Trp	Ile	Pro	Phe	Phe	Gly	Pro	Gly	Ile	535	540
Glu	Gly	Leu	Tyr	Thr	Ala	Gly	Leu	Ile	Lys	545	550
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Arg	Leu	Ala	Asn	Gln	Thr	Ala	Lys	Ser	Leu	565	570
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Arg	Thr	Phe	Ser	Leu	Ile	Asn	Arg	His	Ala	585	590
Ile	Asp	Phe	Leu	Leu	Thr	Arg	Trp	Gly	Gly	595	600
Thr	Cys	Lys	Val	Leu	Gly	Pro	Asp	Cys	Cys	605	610
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Ser	Glu	Gln	Ile	Asp	Lys	Ile	Arg	Lys	Asp	625	630
Glu	Gln	Lys	Glu	Glu	Thr	Gly	Trp	Gly	Leu	635	640
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